Program/Project Management Learning simulation

The Project Management Learning Simulation (“the Sim” hereafter) is a simplified interactive model of the engineering process, crafted to demonstrate to project and program managers how different types of project tracking data might affect their decisions during the design process. The Sim simulates control over the first stage engine development of a launch vehicle that is carrying a capsule-type payload. This is purposely vague, as simulations often convince users that the system is simulating reality perfectly—that is not the goal. Rather, the goal is to show how few levers a program manager has, and how he or she will use those levers differently when presented with different information.

Underneath the exterior of the Sim, a sophisticated model simulates the actual process of engineering work being done. Virtual mistakes are made by virtual people while they create this virtual design. Later in the timeline, those virtual mistakes are discovered and virtual work hours are required to fix those mistakes.

There are several levels of realism. In the first, redesigns and mitigations of risk do not obviate any work that has already been done, and the user has no control of the schedule. In the second level of realism, redesigns and mitigations of risk obviate some of the work that has already been done. In the third level of realism, the student gains control of the schedule, and can accelerate or delay the launch date for the rocket; however, the simulated engineers experience fatigue effects if they are asked to work overtime: more work gets done, but the number of errors created as a percentage of that work increases depending on how many weeks of overtime have been worked.

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